

DRAFT COMPATIBILITY DETERMINATION

USE: Beach Use

REFUGE NAME: Parker River National Wildlife Refuge

ESTABLISHING AUTHORITY: Migratory Bird Conservation Act (16 U.S.C. §715d)

REFUGE PURPOSE: "...for use as an inviolate sanctuary, or for any other management purpose, for migratory birds." (16 U.S.C. §715d)

MISSION OF THE NATIONAL WILDLIFE REFUGE SYSTEM:

To administer a national network of lands and waters for the conservation, management, and where appropriate, restoration of the fish, wildlife, and plant resources and their habitats within the United States for the benefit of present and future generations of Americans. (16 U.S.C. §3901(b))

DESCRIPTION OF USE

(a) What is the use? Is the use a priority public use?

This use consists of individuals participating in beach-related activities, such as swimming, sunbathing, surfing, and some incidental picnicking and beachcombing. Other activities include beach games such as throwing frisbees and balls. This is not a priority public use.

(b) Where would the use be conducted?

This use would occur on the sandy portion of the 6.2 mile Refuge beach and adjacent waters. There are six parking lots with boardwalks that access the beach. Beach use, particularly sun bathing, picnicking, swimming tend to concentrate around these access points. During the plover nesting season (April 1 to mid-July/August), the Refuge beach south of Lot 1 is closed to all public use. The small section of beach north of Lot 1 is open to public use year round.

(c) When would the use be conducted?

This use mainly occurs during the warmer summer months from sunrise to sunset when the Refuge is open to the public. Use from April to mid-July or mid-August is low as the majority of the beach is closed to the public to protect the endangered piping plover.

(d) How would be use be conducted?

Beach-related activities include walking, running, sunbathing, swimming, surfing, picnicking, and outdoor recreation (e.g. frisbee). Fishing also occurs on Refuge beaches, but as a priority public use, its impacts will be assessed in 2009 when we review the priority public uses. Beach combing is an activity that is incidental to beach use. Beach goers sometimes collect and remove from the beach, shells or other items of interest that wash up on the beach.

(e) Why is this use being proposed?

This is an traditional activity on the Refuge, and is enjoyed by hundreds of thousands of visitors annually.

AVAILABILITY OF RESOURCES:

The Refuge maintains six boardwalks and associated parking lots to provide beach access. Due to the dynamic nature of the beach ecosystem, these facilities require over 300 hours of maintenance annually. Refuge staff spends approximately 40 hours a year maintaining the boardwalk. The majority of the maintenance is carried out by the Refuge's Youth Conservation Corp program and Refuge volunteers.

The Refuge also provides bathroom facilities for Refuge visitors. Beach users comprise approximately 70-80 percent of all Refuge visitors. Maintenance costs of the bathroom facility and drinking water supply is estimated to be \$8,000 annually. Additionally, Refuge staff spends approximately 70 hours annually to manage these facilities.

During the summer months, up to three enforcement officers ensure visitor compliance with Refuge regulations. The majority of LE time is associated with beach users during the summer months. Law Enforcement cost associated with this activity is estimated to be in excess of \$100,000 per year. Management of visitors and visitor facilities typically take up the majority of an outreach specialist time during weekends. During the plover season (April through August), volunteers contribute over 1300 hours to ensure visitor compliance with beach closures. The entrance fee program helps to alleviate the cost of this activity.

ANTICIPATED IMPACTS OF THE USE:

Beach use at Parker River Refuge is the highest from the time of beach opening (mid-July through mid-August) to Labor Day. In an average year, the Refuge closes the gates an average of 15 times due to capacity¹, approximately once a weekend during the summer months. On nice weekends, the Refuge may close up to three times a day due to capacity.

The high concentration of people on the beach may displace wildlife using the beach. This includes the federally threatened piping plover. The beaches are opened to the public as each family of piping plovers fledge, from south northward, and from north southward. For the two to three week period from fledging to migration, the young plover chicks may be disturbed by visiting public while foraging or resting. Potential impacts of this disturbance are discussed below with impacts of migratory shorebirds.

Beach use north of Lot 1 (open year round) can also negatively impact nesting piping plovers. Although beach use is not typically high at the beginning of the plover nesting season, the closure of the remaining Refuge beaches concentrates all beach use in this tenth of a mile area. While suitable nesting habitat is roped off, a plover pair searching for a nesting site is not likely to select the area off Lot 1 due to high disturbance rates. In

¹ The Refuge can accommodate up to 300 vehicles for beach use

the past two years, hatched plover chicks have used the open Lot 1 area for foraging. When this foraging activity is observed, the open portion of the Lot 1 beach is closed.

The greatest impact of beach use on wildlife is disturbance to fall migrating shorebirds. Parker River Refuge is an important migratory stopover for shorebirds, and was recently designated as a Western Hemisphere Shorebird Reserve Network site. During peak migration, 1,000-1,500 shorebirds forage or rest on the beach front at Parker River Refuge. Shorebirds annually migrate hundreds or thousands of miles, often making only a few strategic stopovers to accumulate fat for the next leg of their long-distance flights. The potential for shorebird disturbance is great at Parker River as the peak shorebird migration (August) coincides with a period of highest beach use on the Refuge beach.

Repeated human disturbance of foraging or resting shorebirds at a migratory stopover site has several negative impacts to shorebirds. Human disturbance reduces the amount of time shorebirds spend foraging or roosting, reducing their ability to accumulate fat needed for their long distance flight. Disturbance also forces the birds to use up energy in order to escape the disturbance, resulting in lower weight birds. Finally, chronic disturbance may partly or entirely displace a bird from an area (Pfister *et al.* 1992

In 1996, several national wildlife refuges, including Parker River, investigated the impacts of human disturbance to migrating shorebirds. The study found that shorebirds using the beach are more likely to respond to human disturbance (82%) as compared to those using impoundments (30%) (Harrington and Drilling 1996). Shorebird disturbance on Parker River's beach to be among the highest (8 times per hour) compared to other Refuge and non-Refuge sites (*Ibid*).

In addition to the direct impact described above, beach use can have indirect impact on wildlife. Heavy use of the beach front can dry out the sand, contributing to beach erosion. Trash (food) left on the beach can attract predators that feed on nesting piping plover and least terns, or roosting shorebirds. Removal of shells and other natural debris from the Refuge beach may have indirect biological and ecological effects. Decomposition of shells contributes to the nutrient cycle of the beach ecosystem. Shells washed up on the beach create microhabitats that support invertebrate populations, which are important prey to wildlife, particularly nesting and migrating shorebirds (see importance of wrack to shorebirds in ORV CD).

PUBLIC REVIEW AND COMMENT:

This Compatibility Determination is provided for public comment for a 14-day period, from December 15 to 29, 2004. Availability of the draft CD is advertised through a legal notice in the local newspaper, press release, flyers at the Refuge entrance gate and other public areas, and through the Refuge's web site.

DETERMINATION (check one below):

_____ Use is Not Compatible

x Use is Compatible With the Following Stipulations

STIPULATIONS NECESSARY TO ENSURE COMPATIBILITY:

- Continue beach closures to avoid and minimize disturbance to nesting piping plovers and least terns.
- Continue the volunteer plover warden program to educate the public about importance of minimizing disturbance to the piping plover and least tern.
- Visitors will only access the beach via established boardwalks. Enforce all closures to dune areas to minimize disturbance.
- Monitor shorebird use during fall migration to better assess foraging and resting areas.
- Enforce federal regulations prohibiting removal of any plant, animal, and parts thereof from the Refuge, unless otherwise permitted through a Special Use Permit.
- Refuge staff will develop a “Tread Lightly” policy, stressing responsible use in natural areas, particularly those pertinent to national wildlife refuges, to be incorporated into all future Refuge educational and interpretive programs.
- Continue to close the gate when parking capacity is reached and enforce parking regulations to ensure adequate disbursement of visitor use on the beach.

LITERATURE CITED:

Harrington, B.A., and N. Drilling. 1996. Investigations of effects of disturbance to migratory shorebirds at migration stopover sites on the U.S. Atlantic Coast. A report to the U.S. Fish & Wildlife Service, Region 5, Migratory Bird Program. Hadley, Massachusetts. 87 pp.

Pfister, C. B.A. Harrington, and M. Levine. 1992. The impact of human disturbance on shorebirds at a migration staging area. *Biological Conservation*. 60(2): 115-126.

Signature – Refuge Manager: _____
(Signature and Date)

Concurrence – Regional Chief: _____
(Signature and Date)

Mandatory 10 – year Reevaluation Date: Dec. 31, 2009